

JOSEPH POTT

Doc No 245-43

Pamphlet Case No. 35.

JAMES FLETCHER, LL.D.

Dr. Fletcher as an Entomologist.

An address given at the Memorial Meeting of the
Ottawa Field-Naturalists' Club, December 1st, 1908.

Description of *Psilocorsis fletcherella*.

A new species of moth of the Family Ecophoridae.

The Published Writings of Dr. Fletcher.

(ARTHUR GIBSON)

(Reprinted from Memorial Number of Ottawa Naturalist, published by
the Ottawa Field-Naturalists' Club, January, 1909).



James Fletching.

JAMES FLETCHER, LL.D.

As mentioned in the December number of THE OTTAWA NATURALIST, it is with great regret that we have to record the death of our very dear friend Dr. James Fletcher, which occurred at the Royal Victoria Hospital, Montreal, on Sunday morning, November 8th, 1908. There are many sad hearts among the members of the Ottawa Field-Naturalists' Club, owing to the demise of him who has been styled its "Father". For the past three years his health had been gradually changing, and becoming undermined by intermittent hemorrhages resulting from a malignant tumour which caused his death. Four years ago, when, with the writer and some others, he was tobogganing near his home at the Experimental Farm, he met with an accident which confined him to his house for two months. Since then he often said that his health was not what it was before, and it may be that the trouble which brought his useful life to a close had its origin then. During the last year particularly he suffered much, at times, but his was not the nature to complain, and very few, even of his more intimate friends, really knew that his life was undergoing a serious change. The writer, who was constantly associated with him in the official work of the Division of Entomology and Botany knew what aches and pains he bore. Often, especially of late, as we were working together he would say that his head was thumping as if it would break, but it was only during such attacks towards the end of the afternoon that he would say he would have to stop and get away from the office.

On Thursday afternoon, October 29th, he left Ottawa for Montreal, to consult a specialist, saying that he would be back again on Saturday, or Monday. On November 1st the writer received a letter from him with regard to the annual meeting of the Entomological Society of Ontario, in which he said: "I find it is no use, I cannot get to the meeting. In fact, I only got here just in time. I shall probably not be back for another fortnight at least....." On the following day he wrote again saying: "I am very comfortable, everything so far is going well," and, referring to the eggs of a rare butterfly which had been sent to him, he said: "The eggs of *Dorcas* are in my cellar in a black cardboard box, you had better get track of them." He asked me

to acknowledge these eggs saying that he would write himself in a week or so. This was the last letter from him which we received at the Division.

It was decided soon after his arrival at the Royal Victoria Hospital that he would have to undergo an operation, but, owing to the serious nature of this, it was delayed from time to time, hoping that he would get stronger. This he did not do, however, and the operation had to be performed on Saturday, November 7th. Owing to his very weak condition, he failed to rally and died the next morning. During the whole time he was in the hospital he was very happy and had no fear whatever of the result of the operation. Even here he was looking forward to the near enjoyment of larger quarters for his Department, and of further help to carry on the important work about which he knew so much and which he did so well. The funeral was held on Tuesday, December 10th, from his residence at the Experimental Farm, to St. Barnabas' Church and thence to Beechwood Cemetery.

The Rev. Professor Bethune, in the *Canadian Entomologist*, December, 1908, has expressed our feelings so well when he says: "Few men ever made so many loving friends in all walks of life; every one who came to know him did not fail to become warmly attached to him. There are many sad hearts grieving at his loss all over the Dominion of Canada, and many too in widely scattered places in the United States. Old and young, rich or poor, learned or ignorant, children and their elders, it made no difference—he had a kindly word for each one, and most can treasure in their memories a kindly deed as well. When he addressed a meeting he captivated his audience at once, and when he joined an excursion of nature students all were eager to be with him, and learn from him some of the secrets of the woods and fields that he knew so well. We shall not see his like again, but we may all feel that it was good for us to have known him—his memory will long live in our hearts—his noble words and generous deeds will be happy recollections for many a year to come."

Dr. Fletcher was born at Ashe, in the County of Kent, England, on March 28th, 1852. He was educated at King's School, Rochester, and came to Canada in 1874 as a clerk in the Bank of British North America. Two years later he left the bank and became an assistant in the Library of Parliament at Ottawa. All his spare time he devoted to entomology and botany and soon became a recognised authority not only on these subjects but on other branches of natural history as well.

While he was continually busy with his official work, he yet found time for many other things. He was a loyal member of the Church of England and a generous supporter of all her works.

He attended St. Barnabas' Church, of which at the time of his death he was a warden. His special aptitude for teaching and his love of children made him an ideal Superintendent of the Sunday School, in Holy Trinity Church, Ottawa East. In this capacity he acted for over twenty years, seldom missing a Sunday when he was in Ottawa. He was an active and enthusiastic member of the Brotherhood of St. Andrew, a member of the Board of Governors of St. Luke's Hospital, and a member of the Rideau Club.

At a meeting of the Council of the Ottawa Field-Naturalists' Club, held on November 10th the following resolution of condolence was passed: "The members of the Council of the Ottawa Field-Naturalists' Club desire to place on record their profound sorrow and sense of deep personal loss in the death of Dr. James Fletcher, and to express their sincerest sympathy to his widow and family in their bereavement. Dr. Fletcher was one of the founders of the Ottawa Field-Naturalists' Club which is now nearly 30 years old. It is peculiarly sad that he, who was so often referred to as the 'Father' of the Club, should be the first member of the original council to be removed from our midst."

At this meeting it was decided to hold a Memorial Meeting in the large assembly hall of the Normal School.

• ARTHUR GIBSON.

DR. FLETCHER AS AN ENTOMOLOGIST.

BY ARTHUR GIBSON.

I am very glad indeed of this opportunity of saying a few words of one with whom it was my happy lot to be closely associated, for nearly ten years, in the official Government work of practical entomology. It is not necessary for me to say that Dr. James Fletcher was a great entomologist. This fact is widely known, not only in Canada and the United States, but even throughout the whole world. It is the people of Canada, however, who will chiefly miss his kindly help, always so cheerfully given. To Canadian students of insects, his untimely death is a terrible blow, and entomology generally has lost one of its most accomplished exponents. Early in life Dr. Fletcher had a keen love for insects and their ways, and before he came to Canada he was familiar with the butterflies and other insects of his native land. He made a special study, however, of those kinds which are injurious or beneficial, and never lost an opportunity to add to his knowledge of these creatures, which play such an important part in the welfare of mankind. Not a few Canadians have done splendid work in entomology, from the continued encouragement and help which they received from him.

From a purely scientific standpoint Dr. Fletcher did splendid work among the diurnal lepidoptera. For many years he was intensely interested in Canadian butterflies and through his studies was recognised as a high authority on these insects by American entomologists. He was not only a student of the perfect forms of butterflies, but was deeply concerned in finding out their true life-histories. Many a long trip from Ottawa was taken by him to get the eggs of a rare species, in order that the various stages of the insect might be studied. During these collecting trips, too, many new species were discovered. If we glance through the lists of North American insects, we find that quite a number of species were named in his honour. The following is a list of the insects to which the name of Fletcher has been given:—

Cryptus fletcheri Provancher: Additions Faune Hyménoptérologique, 1886, Vol. II, p. 361. (= *Comsocryptus calipterus* Say).

Xylomiges fletcheri Grote: Canadian Entomologist, 1888, Vol. XX, p. 130. (= *Xylomiges patalis* Grote).

Coleophora fletcherella Fernald: Canadian Entomologist, 1892, Vol. XXIV, p. 122.

- Crataepus fletcheri* Ashmead: Canadian Entomologist, 1892, Vol. XXIV, p. 309.
- Lecanium fletcheri* Cockerell: Canadian Entomologist, 1893, Vol. XXV, p. 221.
- Trypoxys fletcheri* Harrington: Canadian Entomologist, 1894, Vol. XXVI, p. 245.
- Coccophagus fletcheri* Howard: Bulletin No. 7, New Series, Division of Entomology, U. S. Dept. Agr., 1897, p. 63.
- Papilio turnus* L., var. *fletcheri* Kemp: Entomological News, 1900, p. 481.
- Culex fletcheri* Coquillett: Proceedings of the United States National Museum, Vol. XXV, 1902, p. 84.
- Catocala unijuga* Walker, var. *fletcheri* Beutenmüller: Bulletin of the American Museum of Natural History, 1903, Vol. XIX, p. 509.
- Xylina fletcheri* Smith: Psyche, 1904, Vol. XI, p. 56.
- Enarmonia fletcherana* Kearfott: Canadian Entomologist, 1907, Vol. XXXIX, p. 127.
- Brephos fletcheri* Smith: Canadian Entomologist, 1907, Vol. XXXIX, p. 370.
- Platycleis fletcheri* Caudell: Proc. U.S.N.M., Vol. XXXI, 1907, p. 403. (= *Idionotus brevipes* Caudell!).
- Eupithecia fletcherata* Taylor: Ottawa Naturalist, 1907, p. 200.
- Lithocolletis fletcherella* Braun: Transactions of the American Entomological Society, 1908, Vol. XXXIV, Oct., p. 338.
- Psilocorsis fletcherella* Gibson: Ottawa Naturalist, Jan. 1909.

Speaking more particularly of his work in economic, or practical, entomology which occupied the best of his time and labour for at least 25 years, he has truly left behind him a vast store of knowledge in the annual reports which he presented to the people of Canada in the large yearly reports published by the Dominion Experimental Farms, in the special bulletins which he prepared, and in the almost yearly Evidence which he gave before the Standing Committee on Agriculture and Colonization of the House of Commons, all of which have already been referred to by Dr. Saunders. In all of these publications valuable information on insects injurious or beneficial to agriculturists, horticulturists and others, is given in the most accurate manner, with the remedies which have been found most useful for those kinds which are destructive to crops, etc.

Of the many injurious insects upon which he did original research work, brief mention may be made of the following.

The Mediterranean Flour Moth, which first appeared in Canada in 1889: its life-history was worked out and the advant-

age of freezing the insects by opening the mills to the cold of winter was pointed out, among other remedies.

The Cigar Case-bearer of the apple was first treated of in his annual report for 1891, and further original observations are to be found recorded in his report for 1894.

The Hop Vine Borer did much harm in Ontario hop fields in 1892. The habits of the insect were studied and published. The same year new facts were learned regarding the life-history of the Red Turnip Beetle, which every year does some damage to cruciferous crops in the Prairie Provinces.

The Pea Moth claimed special attention in 1894, and a lengthy article was published in his annual report for that year. The Peach Bark-borer was also studied the same year and new facts recorded regarding the life-history.

In 1895 the Joint-worm which attacks wheat was investigated, and valuable information was obtained on the habits of this enemy of this important cereal. The Cottony Grass Scale was also studied the same year, as was also the New York Plum Scale.

Mention of the Wheat-stem Maggot in Canada first appeared in his 1896 report when an outbreak which occurred in the Northwest was studied. The same year the first record of the Apple Maggot in Canada was made.

In 1897 much study was given to the San José Scale, which had gained a firm foothold in certain of the western counties of Ontario. A lengthy article appears in his report for that year.

The Rocky Mountain Locust was given special study in 1898 when the insect did much damage in southern Manitoba.

The Hessian Fly wrought serious injury in the fall wheat fields of Ontario, and the spring wheat fields of Manitoba in 1899, and called for special investigation. The same year the Destructive Pea Aphis made its first appearance in Canada, as did also the Asparagus Beetles.

The Greenhouse Leaf-tyer was also studied in 1899 and 1900 and the life-history has since been published.

One of the most remarkable outbreaks of an injurious insect which has ever been recorded in Canada occurred in 1900, when the Variegated Cutworm appeared in British Columbia. Original notes on the life-history appear in his annual report for that year, as also on the Spotted Cutworm which did much damage in Ontario.

In 1901 original observations on the life-history of the Variable Cutworm were published and a more complete article describing in detail the various larval stages appeared in the Canadian

Entomologist for November, 1902. Notes are also given in his 1901 report on *Semiophora youngii*, a new enemy of conifers.

The Sugar Beet Webworm was studied in 1903 owing to the damage it did in Manitoba. Attention was also given to the White-marked Tussock Moth, which has done so much harm to shade trees in many Canadian cities.

During 1905 another new pest made its appearance in eastern Canada in destructive numbers and the common name, "The Spined Rustic" was given to it by Dr. Fletcher. The full life-history was worked out and published.

The first Canadian nests containing caterpillars of the Brown-tail Moth were received by Dr. Fletcher in 1906, and during the summer the insect was studied at the Central Experimental Farm, and a lengthy article on it was prepared and published in his annual report, as well as in several agricultural papers.

The same year and in 1907 the Rose Chafer caused enormous losses in vineyards in the Niagara district, an account of which appears in his report for 1907. The same year the Rusty Tussock Moth was given special study.

In 1907 and during the present year, the large losses in the hop-yards of British Columbia occasioned by the attacks of the Hop Flea Beetle, called for special thought, and during his recent trip to British Columbia in September last he visited the hop-yards and gave valuable advice to those in charge.

The above are only a few of the injurious insects upon which Dr. Fletcher did original research work. His studies of even the very commonest insects resulted in the finding out of new facts.

In his annual reports, etc., Dr. Fletcher did grand work in educating farmers, fruit-growers, market gardeners etc., to know their worst insect enemies and the way to fight them, and many articles appeared by him on such well-known pests as the San José Scale, the Codling Moth, the Plum Curculio, the Colorado Potato Beetle, the Turnip Beetle, Root Maggots, Cutworms, Grasshoppers, the Hessian Fly, the Wheat Midge, the Western Wheat-stem Sawfly, the Joint-worm, the Oyster-shell Scale, White Grubs, the Pea Weevil, etc., etc.

In the year 1896, Dr. Fletcher received the honorary degree of LL. D., from Queen's University, in recognition of the great services he had rendered to agricultural science. He also received honours from various foreign societies. He was elected a Fellow of the Linnæan Society, a Fellow of the American Association for the Advancement of Science, a Fellow of the Entomological Society of America, a Member of the Association for the Promotion of Agricultural Science, an Honorary Member of the Lancashire and Cheshire Entomological Society, a Cor-

responding Member of the Washington Entomological Society, and was at the time of his death President of the Entomological Society of Ontario and Honorary Secretary of the Royal Society of Canada. He was the first man to urge the formation of the Association of Economic Entomologists, which is the most important society of its kind in the world. For many years he was a member of the Editing Committee of the Canadian Entomologist, and quite recently, since their beginning, was on the Editorial Boards of the Journal of Economic Entomology and of the Annals of the Entomological Society of America.

DESCRIPTION OF PSILOCORISIS FLETCHERELLA, A
NEW SPECIES OF MOTH OF THE FAMILY
ECOPHORIDÆ.

BY ARTHUR GIBSON, CENTRAL EXPERIMENTAL FARM, OTTAWA.

In the Canadian Entomologist, March, 1908, the writer published, under the name of *Cryptolechia quercicella* Clemens, a note on some larvæ, which had been found feeding on *Populus tremuloides*, in the Arboretum of the Central Experimental Farm, Ottawa. On further study the moth reared from these larvæ proves to be an undescribed species of the genus *Psilocorsis*, as mentioned by Mr. August Busck in the Proceedings of the United States National Museum, Vol. XXXV, page 197, 1908. As a tribute to the memory of my late Chief, and ever kind friend, from whom I always received the greatest encouragement and help in my studies, I esteem it an honour to name it

Psilocorsis fletcherella, new species.

Alar expanse 19 mm.

Labial palpi ochreous, margined beneath and on sides with longitudinal black lines, second joint thickened with appressed scales; antennæ simple, without pecten, black, annulated with light ochreous. Face and head rust-yellow; thorax darker, with a tinge of purple; abdomen almost concolorous with thorax, lower edge of segments pale ochreous. Fore wings of a pale gold colour rather heavily dusted with pale brown and having a purplish reflection. Outer discal spot conspicuous, blackish, inner discal spot same colour but not so well defined. Cilia ochreous, darkened with brown. Hind wings: ground colour same as fore wings but only lightly dusted with pale brown. Legs bright pale ochreous, shining; tarsal joints fuscous.

Described from a single, female specimen, the type, Cat.No. 12185 U. S. N. M.

THE PUBLISHED WRITINGS OF DR. FLETCHER.

COMPILED BY ARTHUR GIBSON AND HERBERT GROH.

In the preparation of the following list of writings of the late Dr. James Fletcher, the compilers have met with many difficulties. The author had kept no list of his publications, and search had to be made in many quarters. The list cannot be considered by any means a complete one. Such a list is impossible, owing to the many agricultural and other papers to which he sent material for publication. In the *Montreal Family Herald and Weekly Star*, in his *Farmers' Friends* and *Foes* column, which began in 1896, he has contributed replies to hundreds of enquiries, on a great variety of subjects. A list of these could be added but it has been thought better to omit them here.

In the Annual Reports of the Dominion Experimental Farms:

Report of the Entomologist and Botanist, 1887, pp. 8-41; 1888, pp. 47-77; 1889, pp. 59-92; 1890, pp. 154-205; 1891, pp. 190-220; 1892, pp. 144-167; 1893, pp. 157-193; 1894, pp. 183-226; 1895, pp. 135-181; 1896, pp. 223-276; 1897, pp. 187-230; 1898, pp. 167-219; 1899, pp. 159-204; 1900, pp. 195-249; 1901, pp. 197-262; 1902, pp. 169-201; 1903, pp. 163-215; 1904, pp. 205-256; 1905, pp. 159-204; 1906, pp. 201-234; 1907, pp. 182-213.

In the Interim Report of the Experimental Farms, covering the period from Dec. 1st, 1905, to March 31st, 1906: Report for period and historical resumé of economic entomology in Canada, pp. 59-81.

In the Annual Report of the Minister of Agriculture, 1895: Report of investigations in Manitoba and British Columbia, as Entomologist and Botanist, pp. 10.

In the Annual Report of the Select Standing Committee on Agriculture and Colonization of the House of Commons: Evidences, 1891, pp. 13; 1892, pp. 19; 1893, pp. 24; 1894, pp. 20; 1895, pp. 18; 1896, pp. 22; 1897, pp. 17; 1898, pp. 22; 1899, pp. 20; 1900, pp. 45; 1901, pp. 25; 1902, pp. 56; 1903, no Evidence given; 1904, pp. 26; 1905, pp. 24; 1906-1907, pp. 27.

Bulletins of Experimental Farms:

No. 3. Smuts Affecting Wheat, 1888.

11. Recommendations for the Prevention of Damage by Some Common Insects of the Farm, the Orchard and the Garden, 1891.

14. The Horn Fly, 1892.

19. Grasses: Their Uses and Composition, 1893. (Jointly with Mr. Francis Shutt, M.A., F.C.S., F.I.C.)

22. Part II on Injurious Insects, and Part III on Potato Blights, 1893.

28. Weeds, 1897. Reprinted 1907.

37. Part of, on Apple Insects, 1901.

43. Part of, on Plum Insects, 1903.

46. Part III, on Lucerne or Alfalfa, 1904.

52. Insects Injurious to Grain and Fodder Crops, Root Crops,

and Vegetables, 1905.

56. Parts of, on Insects Injurious to Currants and Gooseberries, and, on Insects Injurious to Raspberries and Blackberries, 1907.

Experimental Farm Notes No. 2: Potato Blights, 1894.

Experimental Farm Notes No. 4: The Russian Thistle, or Russian Tumble Weed, 1894.

Other Publications of the Dominion Department of Agriculture:

Reports of the Dominion Entomologist for 1884, pp. 1-7; 1885, 1-56.

Leaflet on the Clover Seed Midge, 1886.

Farm Weeds of Canada, by G. H. Clark, B.S.A., and James Fletcher, LL.D., F.R.S.C., F.L.S., with illustrations by Norman Criddle. 1906, pp. 1-103. (Text written by Dr. Fletcher).

Government of the North-West Territories:

Bulletin No. 1, Noxious Weeds and How to Destroy Them, 1898.

In the Canadian Entomologist:

Nature-printed Butterflies. Vol. XII, Jan., 1880, pp. 1-3. Also published in Annual Report, Entomological Society of Ontario. Entomology for Beginners—the Calosomas. XII, Feb., 1880, pp. 32-35.

Note on *Meluaa phaton*. XII, Aug., 1880, p. 160.

Thecla nippon. XVI, May, 1884, pp. 92-94. Also in Rep. Ent. Soc. Ont.

A Rare Sphinx Added to the Canadian List (*Pterogon clarkii*). XVII, Dec., 1885, p. 251.

Notes on the Preparatory Stages of *Carterocephalus mandan*. XXI, 1889, pp. 113-116.

Winter Collecting. XXI, 1889, pp. 15-17. Also in Rep. Ent. Soc. Ont.

The Apple Tree Tent Caterpillar. XXI, 1889, pp. 74-76. Also in Rep. Ent. Soc. Ont.

Cutworms. XXI, 1889, pp. 117-120. Also in Rep. Ent. Soc. Ont.

The Imported Currant Sawfly. XXI, 1889, pp. 150-152. Also in Rep. Ent. Soc. Ont.

The Tiger Swallow-tail. XXI, 1889, pp. 201-204. Also in Rep. Ent. Soc. Ont.

The Mediterranean Flour Moth. XXII, March, 1890, pp. 41-44. Also in Rep. Ent. Soc. Ont.

The Northern Mole Cricket. XXIV, 1892, pp. 22-25.

Notes on Killing, Preserving and Relaxing Insects. XXIV, 1892, pp. 14-16. Also in Rep. Ent. Soc. Ont.

The Mottled Umber Moth. XXVI, Jan., 1894, pp. 22-24.

Notes on Mr. E. F. Heath's Collection of Butterflies. XXVII, Nov., 1895, pp. 314-315.

The Cigar-case Bearer of the Apple. XXVIII, May, 1896, pp. 128-130.

Argynnis idalia in New Brunswick. XXIX, April, 1897, p. 93.

Papilio ajax, var. *marcellus* in British Columbia. XXXI, Jan., 1899, p. 8.

The Bite of *Otiorynchus ovatus*. XXXI, Jan., 1899, p. 14.

Description of the Full-grown Larva of *Grapta j-album*. XXXII, Sept., 1900, pp. 273-276.

Description of the Full-grown Larva of *Anacamptis lupinella*. XXXIII, Jan., 1901, pp. 15-16.

Life-history of the Variable Cutworm, *Mamestra atlantica*, Grt. XXXIV, Nov., 1902, pp. 279-284. (Jointly with Mr. Arthur

- Gibson).
- Note on *Deilephila galii*. XXXV., April, 1903, p. 109.
- A New Food Plant for the Common Spring Blue Butterfly (*Cyaniris ladon*, var. *lucia*). XXXVI, Jan., 1904, p. 4.
- How do Insects pass the Winter? XXXVII, March, 1905, pp. 79-84.
- Canadian Three-color Process Illustrations. XXXVII, May, 1905, pp. 157-159.
- The Buffalo Carpet Beetle. XXXVII Sept., 1905, pp. 333-334.
- The Larva of *Eupithecia interruptofasciata*. XXXVII, pp. 262-263. (Jointly with Mr. Artnaur Gibson).
- The Pupation of *Euvanesa antiopa*. XXXVIII, Dec., 1906, pp. 411-412.
- The Life-history of the Spined Rustic (*Barathra curialis*, Smith). XXXVIII, Dec., 1906. (Jointly with Mr. Arthur Gibson).
- Platysamia columbia nokomis*. XL, Oct., 1908, p. 373.
- In the Reports of the Entomological Society of Ontario:*
- An Outline Sketch of the Canadian Buprestidæ. 1878, pp. 46-84.
- Scarabæidæ—Diggers. 1879, pp. 65-71.
- On the Chief Benefits Derived by Farmers and Horticulturists from a Knowledge of Entomology. 1880, pp. 57-68.
- Necrophori—Burying Beetles. 1881, pp. 70-73.
- Homoptera—The Harvest Flies and their Allies. 1882, pp. 69-83.
- Collecting in Early Winter. 1883, pp. 31-32.
- Notes on Worms. 1883, pp. 68-76.
- The Larch Saw-fly. 1884, pp. 72-77.
- The Hessian Fly. 1886, pp. 43-45.
- Annual Presidential Address. 1888, pp. 3-13.
- A Trip to Nepigon. 1888, pp. 74-88.
- The Wheat Midge. 1888, pp. 88-91.
- Fuller's Rose-beetle. 1890, pp. 62-64.
- Annual Address as President of the Association of Economic Entomologists. 1891, pp. 36-44.
- The Northern Mole-cricket. 1891, pp. 87-90.
- The Horn-fly. 1892, pp. 49-53.
- Clothes Moths. 1892, pp. 53-58.
- Injurious Insects of 1892. 1893, pp. 8-13.
- Notes on some of the more Important Entomological Exhibits at the Chicago Exhibition. 1893, pp. 61-64.
- The Pitcher Plant Moth. 1894, pp. 44-46.
- The Gypsy Moth. 1894, pp. 67-72.
- The San José Scale. 1894, pp. 73-76.
- Injurious Fruit Insects of the Year 1894. 1894, pp. 76-81.
- The Interrelation of Insects and Flowers. 1894, p. 119. (Jointly with Mr. J. A. Guignard).
- The Value of Entomology. 1895, pp. 16-21.
- Insect Injuries of the Year 1895. 1895, pp. 31-36.
- Insect Injuries to Ontario Crops in 1896. 1896, pp. 58-69.
- The San José Scale. 1897, pp. 78-86.
- The Brown-tail Moth. 1898, pp. 72-74.
- Injurious Insects in 1898. 1898, pp. 75-87.
- Some Interesting Insects. 1899, pp. 30-32.
- The San José Scale. 1899, pp. 17-20.
- Injurious Insects of Ontario during 1899. 1899, pp. 106-111.
- Injurious Insects of Ontario during 1900. 1900, pp. 62-72.
- The Value of Nature Study in Education. 1901, pp. 21-22.
- The Painted Lady Butterfly, *Pyrameis cardui*. 1901, pp. 54-56.
- The Entomological Record. 1901, pp. 99-108.

- Injurious Insects of Ontario during 1902. 1902, pp. 80-87.
 The Pea Weevil. 1902, pp. 3-8.
 Insects Injurious to Ontario Crops. 1903, pp. 62-71.
 Biographical Sketch (with portrait) of Rev. G. W. Taylor. 1903, pp. 108-109.
 Insects Injurious to Ontario Crops during 1906. 1906, pp. 81-86.
 The Entomological Record. 1902, pp. 87-98.
 The Entomological Record. 1903, pp. 85-89.
 The Entomological Record. 1904, pp. 56-78.
 Insects Injurious to Ontario Crops in 1904. 1904, pp. 49-56.
 Notes on Mrs. Nichol's paper (On Butterfly Collecting in Canada). 1905, pp. 79-80.
 Insects Injurious to Ontario Crops in 1905. 1905, pp. 81-90.
 The Entomological Record. 1905, pp. 90-105.
 The Entomological Record. 1906, pp. 86-104. (Jointly with Mr. Arthur Gibson).
 Insects Injurious to Ontario Crops. 1906, pp. 81-86.
 The Entomological Outlook. 1907, pp. 9-15.
 The Entomological Record. 1907, pp. 113-133. (Jointly with Mr. Arthur Gibson).

In the Transactions of the Ottawa Field-Naturalists' Club:

- Inaugural Address as President. 1879, I., pp. 12-22; 1880, II pp. 8-21; 1881, III, pp. 11-19; 1882, IV, pp. 11-21.
 Flora Ottawaensis. 1879, I, pp. 48-61.
 Notes on the Flora Ottawaensis, with Special Reference to the Introduced Plants. 1883, Vol. II, No. 1, pp. 29-37.

In the Ottawa Naturalist:

- Flora Ottawaensis, 2nd Edition (not yet complete). 1888, pp. 1-98.
 Short Instructions for Collectors Away from Home. Vol. III, April, 1889, pp. 8-9.
 Educational Value of Botanic Gardens. V, 1891-92, pp. 105-113.
 Fall Webworm. VI, 1892-1893, pp. 70-71.
Brephos infans at Ottawa. VIII, p. 43, 1894.
 Entomological Notes—The Sumach Gall; *Eacles imperialis*; *Catocala relictæ*; *Anisota virginensis*. VIII, pp. 117-118, 1894.
 Botanical Notes—*Hypopitys lanuginosa*; *Coralorrhiza striata*; *Podostemon ceratophyllus*; *Phragmites communis*. VIII, 1894, pp. 118-121.
 Note on *Erebia discoidalis*. IX, July, 1895, p. 92.
 Note on *Asplenium Ruta-muraria*. IX, Nov., 1895, p. 171.
 Note on The Common House Mouse, *Mus musculus*. IX, Nov., 1895, p. 171.
 Note on *Pamphila peckius*. IX, Nov., 1895, p. 171.
 Note on *Sphinx luscitosa*. IX, Nov., 1895, p. 172.
 Botanical Notes—*Sisymbrium Alliaria*; *Cypripedium aristinum*; *Arethusa bulbosa*; *Listera australis*; *Habenaria fimbriata*; *Trillium grandiflorum*; *Camelina sativa*. X, July, 1896, p. 86.
 A Butterfly-catching Spider. X, Nov., 1896, p. 151.
 Botanical Note—*Ribes ciliolum*. XIII, June, 1899, p. 75.
 Manitoba's Wild Flowers. XIV, April and May, 1900, p. 19.
 Note on Jewel Weed. XIV, Sept., 1900, p. 120.
 A Hint to Gardeners. XIV, Sept., 1900, p. 120.
 Note on *Pieris protodice*. XV, Oct., 1901, p. 161.
 Note on Macrae's Coral-Root. XVII, July, 1903, p. 76.
 Nature Study. XVII, May, 1903, p. 45.

- Matricaria inodora*. XVII, Nov., 1903, pp. 143-144.
 Alum Root as a Remedy for Diarrhoea. XVIII, June, 1904, p. 76.
 The Clouded Sulphur Butterfly (*Colias philodice*). XIX, May, 1905, pp. 59-62.
 Note on *Erythronium albidum*. XIX, June, 1905, p. 68.
 Botanical Notes—The Fruit of *Epigau repens*; Rare Ottawa Plants. XIX, August, 1905, p. 110.
 School Exhibits of Pressed Plants. XX, Nov., 1906, p. 173-176.
 Botanical Note—Fruit and Seed. XX, Nov., 1906, p. 161.
Leucobrepheos middendorfi. XXI, July, 1907, p. 67.
 Mountain Sprites. XXI, March, 1908, pp. 225-231.
 The Honey Bee and other Bees. XXI, Feb., 1908, p. 213.
 Two Newly Introduced European Plants. XXII, July, 1908, p. 80-81.
 A Black Fruited Thorn in Ontario. XXII, Nov., 1908, p. 164.
- In the Transactions of the Royal Society of Canada:*
 Presidential Address, 1895, on Practical Entomology.
 Recent Additions to the List of Injurious Insects of Canada. 1899.
 The Value of Nature Study in Education. 1901.
 Descriptions of Some New Species and Varieties of Canadian Butterflies. 1903. Reprinted in Canadian Entomologist, Vol. XXXVI, May, 1904, pp. 121-130.
 Notes on the Preparatory Stages of Some Species of Canadian Lepidoptera. 1907. (Jointly with Mr. Arthur Gibson).
- In the Report of the Geological Survey of Canada:*
 List of Diurnal Lepidoptera of the Yukon District, Northern British Columbia and Mackenzie River. 1887, pp. 229-231B.
- In "Instructions to Canadian Pacific Railway Land Examiners"* (Winnipeg, Man.), 12mo.:
 Botanical Collections. pp. 24-27.
- In Insect Life* (Department of Agriculture, Washington, D.C.):
 Preliminary Note upon *Chionobas macounii*. II, 1889, pp. 45-46.
 Mediterranean Flour-moth. II, 1889, pp. 187-189.
 Notes upon Injurious Insects of the Year in Canada. III, p. 247.
 President's Inaugural Address, 3rd Annual Meeting Association of Economic Entomologists. IV, 1891, pp. 4-16.
 Notes on Injurious Insects in Canada in 1892. V, Nov., 1892, pp. 124-126.
- In Entomologica Americana:*
 Annual Address of President of the Entomological Club of the A. A. A. S., 1889. 1900, Jan., pp. 1-8.
- In the Proceedings of the Association of Economic Entomologists:*
 Notes from Canada. Bull. 26, New Series, Division of Entomology, U.S. Department of Agriculture, 1900.
 Injurious Insects of the Year in Canada. Bull. 40, Division of Entomology, U.S. Department of Agriculture, 1903.
 Insects of the Year in Canada in 1903. Bull. 46, Division of Entomology, U.S. Department of Agriculture, 1904.
- In the Farmer's Advocate:*
 The Clover-root Borer. 1891, p. 387.
 Articles on Injurious Insects (I-XI). 1892, pp. 18, 58, 147, 198, 231, 308, 348, 395, 439, 479; 1893, pp. 10, 50.
 Clothes Moth. 1893, p. 149.

- Does Wheat turn to Chess? 1893, p. 167.
 Granary Weevils. 1893, p. 423.
 Injurious Insects. 1894, p. 157.
 Insects Injurious to Farm Crops in Canada in 1896. 1897.
 Carpet Beetle or Buffalo Moth. 1897.
 Injurious Insects: San José Scale—The Army Worm. 1897, April 1st.
 Injurious Insects: Spraying—Spring Work. 1897, April 15th.
 The Flour Mite. 1900, March 1st.
 Red Spider Injuries (in Manitoba). 1900, Oct. 15th.
 A Cattle Tick (*Boophilus bovis?*) 1900, May 1st.
 Hessian Fly and Joint Worms. 1906, Oct. 4th.
 Calendar Guide to Spraying. 1907, p. 532.
 Uniform Formula for Lime-sulphur Mixture. 1907, p. 533.
 The Larder or Bacon Beetle. 1907, July, p. 1206.
 Calendar Guide to Spraying, 1908, March 26th, p. 549. (Jointly with Mr. W. T. Macoun.)
 Uniform formula for Lime-Sulphur Mixture. 1908, March 26th, p. 550.
 Insects that trouble Vegetables and How to combat them. 1908, May 7th.

In The Nor'-West Farmer:

- Collecting Botanical Specimens. 1892, p. 196.
 Invasion of Box Elder Bug (*Leptocoris trivittatus*). 1901, Nov. 5th, p. 694.
 A Currant Maggot (*Epoch*). 1901, Dec. 5th, p. 751.
 Getting Rid of Bed Bugs. Sept. 20th.

In the Montreal Family Herald and Weekly Star:

- The Hessian Fly. April 3rd, 1901.
 The Pea Weevil. April 17th, 1901.
 Fleas and Bed Bugs. May 20th, 1901.
 Black Vine Beetle, attacking Strawberries. May 30th, 1901.
 The Powder Post Beetle. Nov. 6th, 1901.
 The Peach-tree Borer. Nov. 13th, 1901.
 Ants in Houses. Nov. 20th, 1901.
 The Hawk House-fly (*Olfersia americana*). Dec. 11th, 1901.
 The San José Scale in Ohio and Ontario. Dec. 18th, 1901.
 Injurious Insects of the Year. Oct., 1902.
 The Pea Weevil. March 25th, 1903.
 The Eyed Elater. August 12th, 1903.
 The Carolina Praying Mantis. Oct. 14th, 1903.
 Fodder Crops of the North-West. Nov. 25th, 1903. (Continued in issue of Dec. 2nd).
 The San José Scale. April 6th, 1904.
 Alfalfa in the Canadian North-West; Growing Brome Grass. May 4th, 1904.
 Injurious Insects of the Year. Nov. 9th, 1904.
 The Rusts of Wheat. Nov. 30th, 1904.
 The Pea Weevil—A Warning. April 5th, 1905.
 The White-marked Tussock Moth. April 26th, 1905.
 Dangers of Sowing Foul Seed Grain. March 7th, 1906.
 Spraying and Spray Mixtures. April, 1906.
 The Brown tail Moth. April 24th, 1907.

In the Montreal Witness:

- Asparagus Beetles. 1902, Aug. 5th.

The Buffalo Moth. 1902, Sept. 16th.

In the Annual Reports of the Fruit Growers' Association of Ontario:

Insects Injurious to Fruit. 1902, pp. 54-55.

Insects and Fungous Diseases of 1903. 1903, pp. 103-106.

Insects Affecting House Plants. 1903, pp. 155-158.

What the Little Bee is Doing. 1904, pp. 90-96.

In the Annual Report of the Bee Keepers' Association of Ontario:

The Value of Bees in Orchards. 1901, pp. 56-63.

In Proceedings of a Convention of Fruit Growers of the Dominion of Canada, Ottawa, Feb., 1890:

Injurious Insects Affecting Fruits—Remedies to Prevent their Ravages. pp. 71-74.

In the Annual Reports of the Canadian Seed Growers' Association:

Co-operation in Improving Seed for Crops. Second Annual Report, 1906, pp. 103-106.

The Place of the Canadian Seed Growers' Association in the Campaign against Weeds. Fourth Annual Report, 1908, pp. 76-78.

In O. A. C. Review (Guelph):

The Study of Insects an Essential Part of Farming. 1908, May, pp. 423-426.

In the Annual Report of Nova Scotia Department of Agriculture, 1907:

The San José Scale.

The Gypsy Moth.

The Common Parasites Affecting Sheep.

In Weekly Globe and Canada Farmer:

Insects and House Plants. 1907, June 19th.

